

Application Questions - Law of Cosines

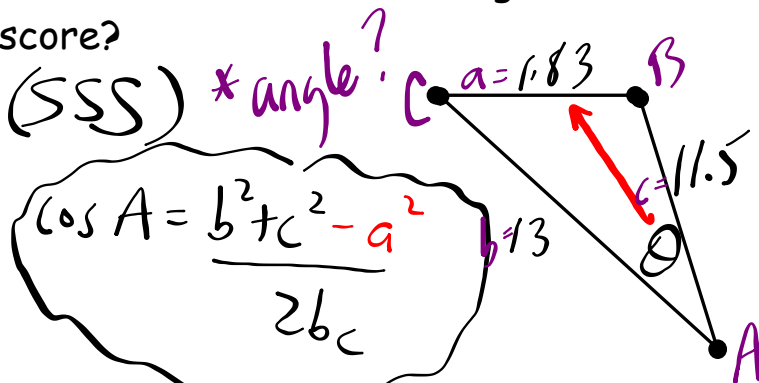
Ask yourself...

1. What am I given?
2. What am I trying to find?



WARM-UP... Law of Cosines ... (SAS) $a^2 = b^2 + c^2 - 2bc \cos A$ * Side?

A hockey net is 1.83m wide. A player shoots from a point where the puck is 13m from one goal post and 11.5m from the other. Within what angle must he make his shot to score?



$$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

$$\cos \theta = \frac{13^2 + 11.5^2 - 1.83^2}{2(13)(11.5)}$$

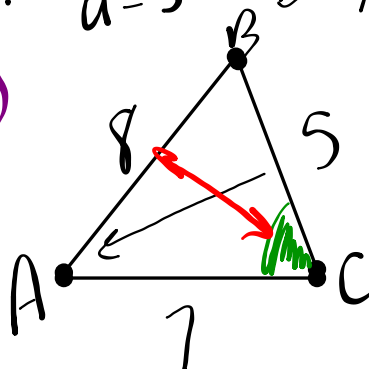
$$\cos^{-1} \cos \theta = \left(\frac{297.9011}{299} \right)$$

$$\theta = 5^\circ$$

Homework Questions (10.11)

5a) $\triangle ABC$: $a=5$ $b=7$ $c=8$ $\angle C=?$

$$\cos C = \frac{a^2 + b^2 - c^2}{(2)(a)(b)}$$



$$\cos^{-1}\left(\frac{10}{70}\right)$$

$$\angle C = 82^\circ$$

Example #2:

From T, a golfer aims a ball towards the hole at H which is 100m away. But the ball actually sliced in a direction 30° off course and lands at M, 60m away. If the next shot is hit 50 m towards the hole, will the ball go in the hole?

SAS $a^2 = b^2 + c^2 - 2bc \cos A$

sketch a diagram $x^2 = 60^2 + 100^2 - 2(60)(100)\cos 30^\circ$

TI-84 Plus Silver Edition
TEXAS INSTRUMENTS

60^2 + 100^2 - 2 * 60 * 100 * cos(30)
= 3207.695155
√(Ans) = 56.63651785

$x = 56.6m$

(No ... 6.6m short)

Homework...

10.12

Worksheet - Law of Cosines.doc



#1. Perimeter
(distance around
triangle)

#2-6

10.13: #2, 4, 5

Attachments

Worksheet - Law of Cosines.doc